limits specified in ISO 3807–2. The use of UN tubes and MEGCs is not authorized.

(2) UN cylinders equipped with pressure relief devices or that are manifolded together must be transported upright.

[29 FR 18743, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 173.303, see the List of CFR Sections Affected which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 173.304 Filling of cylinders with liquefied compressed gases.

(a) *General requirements.* A cylinder filled with a liquefied compressed gas (except gas in solution) must be offered for transportation in accordance with the requirements of this section and the general requirements in § 173.301. In addition, a DOT specification cylinder must meet the requirement in §§ 173.301a, 173.304a, and 173.305, as applicable. UN pressure receptacles must be shipped in accordance with the requirements in 173.301b and 173.304b, as applicable.

(1) A DOT 3AL cylinder may not be used for any material with a primary or subsidiary hazard of Class 8.

(2) Shipments of Division 2.1 materials in aluminum cylinders are authorized only when transported by motor vehicle, rail car, or cargo-only aircraft.

(b) *Filling limits.* Except for carbon dioxide; 1,1-Difluoroethylene (R–1132A); nitrous oxide; and vinyl fluoride, inhibited, the liquid portion of a liquefied gas may not completely fill the packaging at any temperature up to and including 55 °C (131 °F). The liquid portion of vinyl fluoride, inhibited, may completely fill the cylinder at 55 °C (131 °F) provided the pressure at the critical temperature does not exceed 1.25 times the service pressure of the cylinder.

(c) *Mixture of compressed gas and other material.* A mixture of compressed gas must be shipped in accordance with § 173.305.

(d) Refrigerant and dispersant gases. Nontoxic and nonflammable refrigerant or dispersant gases must be offered for transportation in cylinders prescribed in § 173.304a, or in DOT 2P and 2Q containers (§§ 178.33, 178.33a of this subchapter). DOT 2P and 2Q containers must be packaged in a strong wooden or fiberboard box of such design as to protect valves from damage or accidental functioning under conditions incident to transportation. Pressure in the inside metal containers may not exceed 87 psia at 21 °C (70 °F). Each completed metal container filled for shipment must be heated until its contents reach a minimum temperature of 55 °C (131 °F) without evidence of leakage, distortion, or other defect. Each outside package must be plainly marked ''INSIDE CONTAINERS COMPLY WITH PRESCRIBED SPECIFICATIONS''.

(e) *Engine starting fluid.* Engine starting fluid containing a flammable compressed gas or gases must be shipped in a cylinder as prescribed in § 173.304a or as follows:

(1) Inside non-refillable metal containers having a capacity not greater than 500 mL (32 in³). The containers must be packaged in strong, tight outer packagings. The pressure in the container may not exceed 145 psia at 54 °C (130 °F). If the pressure exceeds 145 psia at 54 °C (130 °F), a DOT 2P container must be used. In either case, the metal container must be capable of withstanding, without bursting, a pressure of 1.5 times the pressure of the contents at 54 °C (130 °F). The liquid content of the material and gas may not completely fill the container at 54 °C (130 °F). Each container filled for shipment must have been heated until its contents reach a minimum temperature of 54 °C (130 °F), without evidence of leakage, distortion, or other defect. Each outside shipping container must be plainly marked, ''INSIDE CONTAINERS COMPLY WITH PRESCRIBED SPECIFICATIONS''.

(2) [Reserved]

[67 FR 51647, Aug. 8, 2002, as amended at 68 FR 24661, May 8, 2003; 71 FR 33883, June 12, 2006]

EFFECTIVE DATE NOTE: At 72 FR 55098, Sept. 28, 2007, § 173.304 was amended by adding (f), effective Oct. 1, 2008. For the convenience of the user, the added and revised text is set forth as follows: